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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Chemistry of the antarctic boundary layer and the interface with snow: an overview of the CHABLIS campaign" *by* A. E. Jones et al.

A. E. Jones et al.

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We thank the Reviewer for the very positive comments and suggestions to improve the paper. We have amended the paper as follows:

- Heading now changed to "Key Findings" as suggested

- Spikes in the CO data were used to produce a pollution inventory against which other data could be filtered. This information has now been included in the text and figure caption.

- figures 10a and 10b now match in line and symbol style. Information on periods of daily and 6 hourly sampling is included in the figure captions.

- section 6.4 is now subdivided as suggested. In addition, the caption to table 3 has been expanded to explain that the snow concentrations referred to were from the snow pits. Major cations and anions measured are now listed. Separate nitrite profiles for June and July are shown as these are the new data. It would have been possible to average them too, but a pity to lose the extra information. With regards nitrate, 4 lines on the plot was really too many, and the point of the diagram was lost. There are some gaps in the wintertime profiles because of problems with sampling at that time of the year (very low ambient temperatures). Firstly, the sampling pots had a tendency to crack when being pushed into the snowpit wall, and secondly, we wanted to avoid frostbite in our overwinteres!

- The section on the comparison of up-welling and down-welling radiation has now been clarified. The up-welling and down-welling fluxes would only be in close agreement when the albedo factor has been taken into account. We hope that the text now explains this clearly. Similarly, the role of "trial factors" is further explained in the text. The value of 0.92 has now been discarded; a proper averaging resulted in an average albedo of 0.89; again, this is now included in the text. To further help with clarifying the albedo section, both the captions for Fig 13 and Table 4 have been amended.

- we feel it is also interesting to other scientists to see what can be achieved with very few staff at the field site so have left this sentence as is;

All technical comments addressed except: Table 1 - in the submitted version, the institutes were highlighted by bold print; this came out during typesetting. The bold text is now re-instated in the submitted manuscript.

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 5137, 2008.

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Interactive Comment